

REMARKS

The present Amendment amends claims 1, 4, 6 and 9 and leaves claims 2, 3, 5, 7, 8, 10 and 11 unchanged. Therefore, the present application has pending claims 1-11.

Applicants' Attorney, the undersigned, respectfully request the Examiner to contact Applicants' Attorney by telephone so as to schedule an interview to discuss the outstanding issues of the present application prior to examination.

Claims 1-11 stand rejected under 35 USC §103(a) as being unpatentable over O'Connor (U.S. Patent No. 6,564,228) in view of Dang (U.S. Patent No. 5,446,855). This rejection is traversed for the following reasons. Applicants submit that the features of the present invention as now more clearly recited in claims 1-11 are not taught or suggested by O'Connor or Dang whether taken individually or in combination with each other as suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Amendments were made to each of the independent claims so as to more clearly describe features of the present invention. Particularly, amendments were made to the claims to more clearly recite a data management system for storages, suitable for a system having a plurality of hosts and a plurality of storages connected to a data transfer network. According to the present invention, the data management system includes a converter facility provided in each host for converting, for example, a unit of data specific to an operating system on the host into a unit of data common to the storages or alternatively converting files in a first file format having a

file format specific to the operating system into files in a second format having a file format common to the storages.

The data management system further includes a management facility connected to the hosts and the storages by way of the data transfer network for receiving a name of a unit of data common to the storages from the hosts and managing access information used when the hosts sends a read or write request to the storages. Alternatively, the management facility receives a file name of a file in the first format from the hosts and manages access information used when the hosts sends a read or write request to the storages.

Further, according to the present invention, each of the storages includes a storage device and a virtual space defined therein for storing data and a controller for controlling data transfer through the data transfer network so as to assign the data to the virtual space according to an instruction from the management facility and store the data assigned to the virtual space in the storage device and for processing the read or write request from the hosts by using the data stored in the virtual space.

By use of the above described features of the present invention now more clearly recited in the claims it is possible to transfer data freely among the storages without managing access information of the data in the hosts since such information is managed by the management facility.

The above described features of the present invention now more clearly recited in the claims are not taught or suggested by any of the references of record

specifically O'Connor and Dang whether taken individually or in combination with each other as suggested by the Examiner.

Specifically, O'Connor does not teach or suggest the features of the present invention as now more clearly recited in the claims. O'Connor teaches a method of enabling heterogeneous platforms to utilize a universal file system (UVFS) in a storage area network. Specifically, O'Connor teaches that technology related to a UVFS is installed in the host computer so as to allow the host computer to access a UVFS storage device. However, these teachings of O'Connor do not anticipate nor render obvious the features of the present invention as now more clearly recited in the claims as described above.

O'Connor teaches that a plurality of host having a UVFS mechanism access files in the UVFS storage devices. However, O'Connor does not teach or suggest the management facility connected to a plurality of hosts and the plurality of storages as per the present invention as recited in the claims.

Further, O'Connor does not teach or suggest the management of access information by a management facility nor an assumption of the data movement between a plurality of storages as per the present invention as recited in the claims. In O'Connor, all hosts are concerned with the data access and therefore have to manage continuously access information to the storages contrary to the present invention as recited in the claims. In the present invention, the host need not manage such access information since the management facility manages the access information as recited in the claims.

Still further, O'Connor does not teach or suggest that the UVFS mechanism instructs a staging to a storage such as the managements facility as per the present invention as recited in the claims. Therefore, in O'Connor the access efficiency is different depending upon a location of data to be accessed in the storage. However, in the present invention the access efficiency is constant without regard to the location of the data to be accessed in the storage because the management facility manages the access information. Such features are clearly not taught or suggested by O'Connor.

Thus, O'Connor fails to teach or suggest a management facility, connected to said hosts and said storages by way of said data transfer networks, for receiving a name of a unit of data common to said storages from said hosts and managing access information used when said hosts sends a read request or a write request to said storage as recited in the claims.

Further, O'Connor fails to teach or suggest that each of said storages includes a storage device and a virtual space defined therein for storing data and a controller for controlling data transfer through said data transfer network so as to assign said data to the virtual space according to an instruction from said management facility and store said data assigned to the virtual space in said storage device, and for processing the read request or the write request from said hosts by using said data stored in the virtual space as recited in the claims.

Therefore, as is quite clear from the above, the features of the present invention as now more clearly recited in the claims are not taught or suggested by O'Connor.

The above noted deficiencies of O'Connor are not supplied by Dang. Therefore, combining the teachings of O'Connor and Dang in the manner suggested by the Examiner still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

The Examiner merely relies on Dang for an alleged teaching of a controller for allocating a data which is transferred through the data transfer network to a virtual space and storing the data allocated through the data transfer network to a virtual space and storing the data allocated to the virtual space in the storage device.

In the Office Action, the Examiner points to various teachings in Dang for the above described features. However, these teachings in Dang do not disclose the matter as alleged by the Examiner and as such causes Dang to not supply teachings corresponding to the deficiencies of O'Connor. Thus, even if Dang is combined with O'Connor in the manner suggested by the Examiner, the combination would still be deficient of numerous features of the present invention as recited in the claims shown above not to be taught or suggested by either O'Connor or Dang.

Therefore, combining the teachings of O'Connor and Dang in the manner suggested by the Examiner still fails to teach or suggest the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 USC §103(a) rejection of claims 1-11 as being unpatentable over O'Connor in view of Dang is respectfully requested.

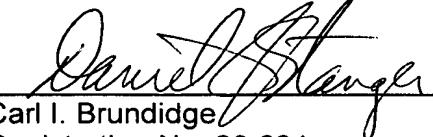
The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references utilized in the rejection of claims 1-11.

In view of the foregoing amendments and remarks, applicants submit that claims 1-11 are in condition for allowance. Accordingly, early allowance of claims 1-11 is respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER & MALUR, P.C., Deposit Account No. 50-1417 (520.39555X00).

Respectfully submitted,

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